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UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface Nonmetal Mine
(Limestone)

Fatal Powered Haulage Accident
May 23, 2006

Natural Bridge Stone Mine
Hinkle Contracting Corporation
Bowen, Powell County, Kentucky
Mine I.D. No. 15-00075

Investigators

Thomas P. Clarkson
Supervisory Mine Safety and Health Inspector

Larry D. Smith
Mine Safety and Health Inspector

Roger W. Rowe
Mine Safety and Health Inspector

Ronald Medina
Mechanical Engineer

Deborah B. Combs
Mine Safety and Health Specialist

Michael E. Pruitt
Mine Safety and Health Specialist

Originating Office
Mine Safety and Health Administration
Southeast District
135 Gemini Circle, Suite 212, Birmingham, AL 35209
Michael A. Davis, District Manager


COUNTER
WEIGHT
STAY CLEAR
MAY 25 2006

OVERVIEW

Benny J. Creech, secondary plant operator, age 44, was fatally injured on May 23, 2006, when he was crushed between the frame of a conveyor belt and the elevated bucket of a front-end loader that he was standing in. The victim was working from the raised bucket of the front-end loader installing a take-up roller for the No.1 belt conveyor.

The accident occurred because safe operating procedures were not established to ensure that miners had the correct equipment or training to safely replace a take-up roller from an elevated position. Management did not conduct a risk assessment to identify all possible hazards and establish safe work procedures for the assigned task.

GENERAL INFORMATION

Natural Bridge Stone Mine, a crushed limestone operation, owned and operated by Hinkle Contracting Corporation, was located seven miles south of Stanton, on Route 15 in Bowen, Powell County, Kentucky. The principal operating official was Donnie Spencer, division plant manager. The mine operated one, ten-hour shift per day, five days a week. Total employment was 24 persons.

Limestone was drilled, blasted, and loaded into haulage trucks by a front-end loader. The material was crushed, screened, and washed. Finished products were sold for use in the construction industry.

The last regular inspection at this operation was conducted May 3, 2006.

DESCRIPTION OF ACCIDENT

On the day of the accident, Benny Creech (victim) reported to work at 7:00 a.m., his normal starting time. He operated the secondary crusher plant that day. Early in the shift Creech had notified the maintenance department that the take-up roller on the No.1 conveyor belt was coming apart. Berton Combs, mechanic, went to the plant, checked the roller, and determined that it would be changed at the end of the shift.

About 4:55 p.m., the crew gathered to change the roller. Mitchell Ratliff, maintenance lead man, positioned a crane by the conveyor belt, then backed the maintenance truck close to the conveyor, and unrolled the cutting torch hoses. Paul Moore, plant utility man, arrived with the front-end loader. Creech and Donnie Spencer, division plant manager, climbed into the loader bucket and the bucket was raised. The bucket then lifted the conveyor's counter weight with the two men inside. They unhooked the chains that supported the weight and it was lowered to the ground in the loader bucket.

Creech then drove a skid steer loader, with attached lifting forks, to the front-end loader, to retrieve the counter weight from the bucket. Ratliff got into the crane and positioned the crane boom to secure the roller being removed. Combs and Ratliff walked up the conveyor belt and attached the chains from the crane to the roller. Ratliff cut the bolts that attached the roller to the conveyor frame on the right side, and Combs cut the bolts on the left side.

Ratliff and Combs went back down the belt. Ratliff then used the crane to lower the roller to the ground. The new roller was attached to the chains and raised by the crane as close as possible to the conveyor belt. Ratliff and Combs went back up the belt, attached come-a-longs to each side of the pulley, and pulled the roller up into position. After the chains from the crane were re-positioned, Ratliff used the crane to lift the roller up into place so it could be secured.

The chains were unhooked from the roller and Ratliff moved the crane. When he returned, the front-end loader was on the left side of the conveyor belt, Combs was up on top of the conveyor belt. Creech had finished tightening the bolts on the left side and was in the loader bucket being lowered to the ground by Moore.

Moore then positioned the front-end loader on the right side of the conveyor belt and raised Creech so he could finish tightening the bolts on the take-up roller and install a grease hose. Ratliff was on the ground gathering tools and Combs was still on top of the belt, when Creech motioned for Moore to move the loader bucket closer to the belt. When the loader was close enough to the conveyor frame, Creech motioned for Moore to stop. Moore stated he was pushing on the brake but the loader engine revved up and moved forward, causing the bucket to contact the conveyor belt frame. Moore realized his foot was on both the fuel and brake pedal. He then removed his foot from the fuel pedal and applied the brake. Combs was almost knocked from the belt when the loader made contact with the conveyor belt frame he was standing on. Moore then backed up and lowered the loader bucket to the ground, got out of the cab, and found Creech lying in the bucket.

Combs traveled down the belt and told Ratliff to call emergency medical assistance. Ratliff drove to the shop where he told personnel to call for help.

Emergency medical personnel arrived at the scene and Creech was pronounced dead by the Powell County Coroner. Death was attributed to crushing chest injuries.

INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 7:30 p.m. on May 23, 2006, by a phone call from Tracey Bubnick, corporate safety manager, to Donald Ratliff, supervisory mine safety and health inspector. An investigation was started the same day. An order was issued under the provisions of section 103 (k) of the Mine Act to ensure the safety of the miners. MSHA's accident investigators traveled to the mine, conducted a physical inspection of the accident scene, interviewed employees, and reviewed documents, conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and employees.

DISCUSSION

Location of the Accident

The accident occurred at the No. 1 conveyor belt located in the secondary crusher plant area of the mine. The conveyor belt roller being replaced was 17 feet, 6 inches above the ground.

Weather
Weather conditions were not a contributing factor. The weather on the day of the accident was partly cloudy and warm, with temperatures ranging from 72 to 80 degrees Fahrenheit.

Equipment

The front-end loader involved in the accident was a 1996 Komatsu Wheel Loader, Model WA500-1LC , with a fully enclosed cab. It weighed approximately 64,000 pounds and was powered by a Cummins, Model 855 diesel engine. The transmission had four forward and four reverse speeds and a neutral position. The service brake and parking brake system tests were conducted, with no load in the bucket, on a 22 percent grade. The front-end loader was inspected and no defects were found with the braking system, steering system, and throttle linkage.

Records
A review of mine operator's inspection records indicated that the mine operator had kept up-to-date maintenance records on the Komatsu Model WA500 loader and a pre-operational check had been conducted the day of the accident.

Training and Experience
Benny Creech had 11 years mining experience, all at this mine. He had received training in accordance with 30 CFR, Part 46.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted, and the following root causes were identified:

Root Causes: Management policies and controls were inadequate and failed to require that the proper equipment was provided to safely complete the repair task. Management's supervision was inadequate and did not ensure that the raised loader bucket was secured and the equipment was blocked to prevent movement prior to persons working from the loader bucket. Management policies and controls were inadequate. Management failed to ensure that employees received adequate training in the health and safety aspects and safe working procedures relating to the task they were assigned. The miner operating the loader did not demonstrate the correct skills or knowledge to maintain control of the equipment he was assigned to operate.

Corrective Actions: Procedures should be established to provide adequate training to employees before they operate mobile equipment. Classroom training, that includes a through review of the operator's manual, should be provided prior to operating mobile equipment. Written safety rules and requirements should be made a hands-on part of task training. A risk assessment should be conducted for each assigned task, to identify and correct all possible hazards and establish safe work procedures.

CONCLUSION

The accident occurred because safe operating procedures were not established to ensure that miners had the correct equipment or training to safely replace a take-up roller from an elevated position. Management did not conduct a risk assessment to identify all possible hazards and establish safe work procedures for the assigned task.

ENFORCEMENT ACTIONS

Order No. 6109809 was issued on May 23, 2006, under the provisions of Section 103(k) of the Mine Act:

> A fatal accident occurred at this operation on May 23, 2006, when a miner was working on the bending roller of the No. 1 return conveyor belt. This order is issued to assure the safety of all persons at this operation. It prohibits all activity in the area of the No. 1 return conveyor and the Komatsu WA 500 (#L121) front end loader until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the effected area.

The order was terminated on May 26, 2006. Conditions that contributed to the accident have been corrected and normal operations can resume.

Order No. 6127768 was issued on June 22, 2006, under the provisions of Section 104(d) (1) of the Mine Act for a violation of 30 CFR 56.14211(b):

A fatal accident occurred at this operation on May 23, 2006, when a miner was crushed between a conveyor structure and the bucket of the front-end loader. The wheels of the front-end loader were not blocked or mechanically secured to prevent the front-end loader from rolling while the victim worked from the raised bucket. The plant manager directed the victim and the other miner to use the front-end loader to install the conveyor pulleys and was present during most of the shift while the miners performed the work. This constituted an unwarrantable failure to comply with a mandatory standard.

The order was terminated on June 26, 2006. The operator has instructed all employees to use the proper equipment such as man-lifts or bucket trucks when working in elevated areas.
All employees were instructed not to work from or travel in front-end loader buckets.

Order No. 6127769 was issued on June 22, 2006, under the provision of Section 104(d)(1) of the Mine Act for a violation of 30 CFR 46.7(a):

A fatal accident occurred at this operation on May 23, 2006, when a miner was crushed between a conveyor structure and the bucket of the front-end loader. The miner who operated the front-end loader and the victim were not task trained in the proper and safe operation of the front-end loader as stated in the operator's manual. The plant manager had knowledge that the miners were operating the front-end loader and its bucket in a hazardous manner without task training. This constituted an unwarrantable failure to comply with a mandatory standard.

The order was terminated on June 26, 2006. The front-end loader operator was task trained in the safe operating procedures, including items covered in the operator's manual, for the machine.

Approved by: _____ Date: _____

Michael A. Davis
District Manager

APPENDIX A

Persons Participating in the Investigation

Hinkle Contracting Corporation

Tracey Bubnick	corporate safety manager
Wylie Clayton	assistant safety manager
Donnie Spencer	division/plant manager
Junior Lawson	pit foreman
Gary Huntsberger	equipment foreman
Berton Combs	mechanic/welder
Mitchell Ratliff	maintenance lead man
Paul Moore	plant utility man

Emergency Medical Services

Carl Wells	Powell County Coroner

Mine Safety and Health Administration

Thomas P. Clarkson	supervisory mine safety and health inspector
Larry D. Smith	mine safety and health inspector
Roger W. Rowe	mine safety and health inspector
Ronald Medina	mechanical engineer
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